Severe ulcerated 'bodybuilding acne' caused by anabolic steroid use and exacerbated by isotretinoin

Verena Voelcker, Michael Sticherling, Jürgen Bauerschmitz

Voelcker V, Sticherling M, Bauerschmitz J. Severe ulcerated 'bodybuilding acne' caused by anabolic steroid use and exacerbated by isotretinoin. Int Wound J 2010; 7:199–201

ABSTRACT

We report a case of severe ''bodybuilding acne'' in a 22-year-old patient. Treatment with isotretinoin paradoxically led to exaceibation and occurrence of pyogenic granuloma-like lesions.

Key words: Acne fulminans • Bodybuilding acne • Isotretinoin • Pyogenic granuloma

Acneiforme skin lesions in connection with the use of anabolic agents during periods of intensive bodybuilding are characteristic for anabol-androgene steroid (AAS)-induced acne, so-called bodybuilding acne (1). Treatment with isotretinoin in some cases paradoxically leads to a worsening of skin reactions up to the development of acne fulminans with the additional incidence of excessive pyogenic granuloma-like granulation tissue, as seen in the patient described below.

CASE REPORT

A 22-year-old patient presented with a 6-month history of continuous deterioration of skin lesions in the chest area. He had been practising intensive bodybuilding over the past 1 year and admitted to having used AAS injections ['Sustanon', a commonly used compound containing four different testosterone esters (2)] for rapid muscle increase. Five weeks after starting the injections with AAS, disseminated inflammatory, partly ulcerative nodules in the chest area developed on top of a pre-existing light acne condition. The patient hereon discontinued the steroid injections and was treated with doxycycline over 4–5 weeks, which did not lead to any improvement. He was therefore treated with oral isotretinoin (50 mg/day). About 5 weeks after the onset of isotretinoin treatment, further massive aggravation of skin lesions started to develop and continued to deteriorate. After a course of 12 weeks, isotretinoin was discontinued and the patient was referred to our dermatology department. He presented with necrotising-purulent and hemorrhagic ulcerations in the chest and shoulder area, painful on palpation and easily bleeding. Comedones were absent. Furthermore, excessive rosy granulation tissue was found scattered in between, resembling pyogenic granuloma (Figure 1). However, general symptoms were missing, lymph nodes were non palpable, fever or

Authors: Dr V Voelcker, Department of Dermatology, University Hospital Erlangen, Hartmannstraße 14, 91052 Erlangen, Germany; M Sticherling, PhD, Department of Dermatology, University Hospital Erlangen, Hartmannstraße 14, 91052 Erlangen, Germany; Dr J Bauerschmitz, Department of Dermatology, University Hospital Erlangen, Hartmannstraße 14, 91052 Erlangen, Germany

Address for correspondence: Dr V Voelcker, Department of Dermatology, University Hospital Erlangen, Hartmannstraße 14, 91052 Erlangen, Germany

E-mail: verena.voelcker@uk-erlangen.de

Key Points

- case report: a 22-year-old patient presented with a 6-month history of continuous deterioration of skin lesions in the chest area
- he had been practising intensive bodybuilding over the past 1 year and admitted to having used AAS injections ['Sustanon', a commonly used compound containing four different testosterone esters for rapid muscle increase
- five weeks after starting the injections with AAS, disseminated inflammatory, partly ulcerative nodules in the chest area developed on top of a pre-existing light acne condition
- the patient hereon discontinued the steroid injections and was treated with doxycycline over 4–5 weeks,which did not lead to any improvement
- after a course of 12 weeks, isotretinoin was discontinued and the patient was referred to our dermatology department
- he presented with necrotising-purulent and hemorrhagic ulcerations in the chest and shoulder area, painful on palpation and easily bleeding
- however, general symptoms were missing, lymph nodes were non palpable, fever or joint pain was absent as well as leukocytosis or elevated erythrocyte sedimentation rate
- bacterial culture of smear showed abundant Staphylococcus aureus
- a diagnosis of acne fulminans-like exacerbation of AAS-induced acne following isotretinoin therapy with pyo-genic granuloma-like ulcerations was made

Key Points

- the patient was treated with intravenous antibiotic therapy (2 g cefotiam) 3 times daily
- local therapy was performed with betametasone ointment and antiseptic fomentations to the crusted area
- this led to a rapid improvement and incipient re-epithelialisation of the skin lesions with only a few active lesions being present after a course of 2 weeks
- as a conclusion, our case is interesting because it shows a rare side-effect of the treatment of choice in severe acne
- moreover, the incidence of severe exacerbation of acne cases caused by anabolic steroids has increased dramatically over the past years, substantially due to illegal medical prescription and ease of purchase over the Internet, a fact that should also be considered

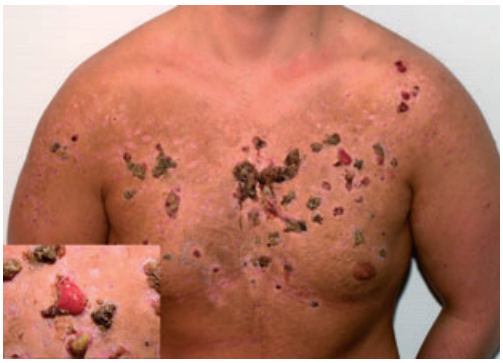

Figure 1. Highly inflammative necrotising-purulent and hemorrhagic ulcerations located in the chest area. Scattered in between, excessive rosy granulation tissue, resembling pyogenic granuloma.

joint pain was absent as well as leukocytosis or elevated erythrocyte sedimentation rate. Bacterial culture of smear showed abundant *Staphylococcus aureus*. A diagnosis of acne fulminans-like exacerbation of AAS-induced acne following isotretinoin therapy with pyogenic granuloma-like ulcerations was made. The patient was treated with intravenous antibiotic therapy (2 g cefotiam) 3 times daily. Local therapy was performed with betametasone ointment and antiseptic fomentations to the crusted area. This led to a rapid improvement and incipient re-epithelialisation of the skin lesions with only a few active lesions being present after a course of 2 weeks. Because of lack of general symptoms, systemic corticosteroids and non-steroidal anti-inflammatory drugs (NSAID) were unnecessary.

DISCUSSION

Acneiforme skin lesions in connection with the use of AAS injections as used during intensive bodybuilding are characteristic for AAS-induced 'bodybuilding acne' (1). Manifestations can present as enhanced seborrhea up to acne conglobata and acne fulminans, even with no pre-existing acne lesions (1). Initially, acne fulminans can resemble acne conglobata, but its distinctive feature is the sudden development of hemorrhagic nodules and plaques, resulting in hemorrhagic ulcerations filled with necrotic and purulent debris (3), as seen in our patient. Interestingly, our patient did not show any systemic reactions, such as fatigue, arthralgia, myalgia, fever or palpable lymph nodes, as usually seen in acne fulminans (3). Our patient additionally developed exuberant pyogenic granuloma-like granulation tissue in between the hemorrhagic ulcerations. Pyogenic granuloma, but also acne fulminans, have been described as a side-effect of isotretinoin therapy (4). The 'first-generation' retinoid isotretinoin is still the treatment of choice in severe acne and has also been used in our patient (5). Traupe *et al*. report three cases of pyogenic granuloma-like lesions on the chest and shoulders after isotretinoin therapy of acne fulminans following testosterone therapy for excessive body height (6). Campbell *et al*. observed excessive granulation tissue in resolving acne lesions in a patient on isotretinoin treatment (7). In the reported cases as well as in our patient, lesions occur 5–8 weeks after the onset of treatment, mostly in the chest and back area. Very rarely, the face was affected, as described by Turel and Hagler (8,9), in one case granuloma pyogenic-like tissue developed on the thigh (10). MacKenzie-Wood *et al*. even described pyogenic granuloma-like lesions in a patient using topical isotretinoin (11). The exact causes of such excessive granulomatous lesions following therapy with isotretinoin are so far unclear. They are discussed to either be a consequence of augmented skin fragility and vascular proliferation or a result of immunological reactions against *Propionibacterium acnes*-antigens (10,12). Genetic reasons also may play a role as some of the observations were made in siblings or twins (4,13).

As a conclusion, our case is interesting because it shows a rare side-effect of the treatment of choice in severe acne. Moreover, the incidence of severe exacerbation of acne cases caused by anabolic steroids has increased dramatically over the past years, substantially due to illegal medical prescription and ease of purchase over the Internet, a fact that should also be considered (14).

REFERENCES

1 Melnik B, Jansen T, Grabbe S. Abuse of anabolic-androgenic steroids and bodybuilding acne: an underestimated health problem. J Dtsch Dermatol Ges 2007;5:110–7.
2 Walker SL, Parry EJ. Acne induced by 'Sus' and 'Deca'. Clin Exp Dermatol 2006;31:297–8.
3 Jansen T, Plewig G. Acne fulminans. Int J Dermatol 1998;37:254–7.
4 Blanc D, Zultak M, Wendling D, Lonchampt F. Eruptive pyogenic granulomas and acne fulminans in two siblings treated with isotretinoin: a

possible common pathogenesis. Dermatologica 1988;177:16–8.
5 Brelsford M, Beute TC. Preventing and managing the side effects of isotretinoin. Semin Cutan Med Surg 2008;27:197–206.
6 Traupe H, von Muhlendahl KE, Bramswig J, Happle R. Acne of the fulminans type following testosterone therapy in three excessively tall boys. Arch Dermatol 1988;124:414–17.
7 Campbell JP, Grekin RC, Ellis CN, Matsuda-John SS, Swanson NA, Voorhess JJ. Retinoid therapy is associated with excess granulation tissue responses. J Am Acad Dermatol 1983;9:708–13.
8 Turel A, Ozturkcan S, Sahin MT, Turkdogan P. A rare side effect of systemic isotretinoin treatment; pyogenic granuloma. J Europ Acad Dermatol Venerol 2003;17:609–11.
9 Hagler J, Hodak E, David M, Sandbank M. Facial pyogenic granuloma-like lesions under isotretinoin therapy. Int J Dermatol 1992;31: 199–200.
10 Exner JH, Dahod S, Pochi PE. Pyogenic granuloma-like acne lesions during isotretinoin therapy. Arch Dermatol 1983;119:808–11.
11 MacKenzie-Wood AR, Wood G. Pyogenic granuloma like lesions in a patient using topical tretinoin. Australas J Dermatol 1998;39: 248–50.
12 Kellett JK, Beck MH, Chalmers RJ. Erythema nodosum and circulating immune complexes in acne fulminans after treatment with isotretinoin. Br Med J (Clin Res Ed) 1985;290:820.
13 Cavicchini S, Ranza R, Brezzi A, Bottoni A, Tosi R, Caputo R. Acne fulminans with sacroiliitis during isotretinoin therapy. Eur J Dermatol 1992;2:327–8.
14 Striegel H, Simon P, Frisch S, Roecker K, Dietz K, Dickhuth HH, Ulrich R. Anabolic ergogenic substance used in fitness- sports; a distinct group supported by the health system. Drug Alcohol Depend 2006;81:11–9.